

DETECTION OF ALZHEIMER'S DISEASE

Shaik Akbar

Associate Professor, Department of CSE-AIML
Geethanjali College of Engineering and Technology, Hyderabad, Telangana, India

Manchireddy Sowmya, Nutakki Shreya, Triveni.K

Under Graduate Department of CSE-AIML
Geethanjali College of Engineering and Technology, Hyderabad, Telangana, India

Alzheimer's disease (AD) represents a prevalent form of dementia, typically impacting individuals aged 60 and older. Identifying AD in its early stages remains a daunting task in clinical settings, with few reliable diagnostic systems currently available. Furthermore, clinical trials for AD medications face significant risks of failure, and a definitive cure remains elusive. AD progresses through various stages, including very mild, mild, and moderate, yet discerning these stages proves challenging, often leading to worsening health conditions, diminished memory, and reliance on others for daily tasks, particularly in severe cases. Early detection of mild cases holds promise in guiding additional medical interventions to impede disease advancement and mitigate brain damage. Deep learning (DL) has garnered substantial interest for early AD recognition, although existing algorithms struggle to detect changes in brain networks among individuals with mild dementia. Nonetheless, scientists and researchers are diligently working on methods for early identification using MRI images. This study employs MRI dataset comprising 6400 images, employing a DL algorithm with a neural network classifier for early AD diagnosis, yielding promising outcomes in terms of accuracy. Notably, the DenseNet121 deep learning technique achieved an impressive 97.32% accuracy, outperforming other models, highlighting its potential for early detection and intervention.